APPENDIX 2 – NONPOINT SOURCE PROGRAM

Nonpoint Source Program

Nonpoint source pollution is the leading cause of water quality impairment in California. California's Nonpoint Source (NPS) Pollution Control Program has been in effect since 1988. In 2000 the lead State agencies for the NPS Program, the SWRCB and CCC in coordination with the RWQCBs, released the "Plan for California's Nonpoint Source Pollution Control Program" (NPS Program Plan). The NPS Program Plan enhances the State's efforts to protect water quality, and to conform to the Clean Water Act Section 319 (CWA 319) and Section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA). The State's long-term goal is to "improve water quality by implementing the management measures identified in the California Management Measures for Polluted Runoff Report (CAMMPR) by 2013." A key element of the Program is development and implementation of five-year plans that cover State Fiscal Years 1998-2003, 2003-2008, and 2008 –2013.

The California Nonpoint Source Program encompasses more programs than the activities funded through the federal nonpoint source program resources. The following describes the Regional Board's activities within each of the NPS Program Management Measures.

Management Measure 1A: Erosion and Sediment Control: Sediment from irrigated agriculture and other land uses are seriously impacting water quality in the valley floor tributaries and mainstream channels. These impacts include burial of habitat and input of pesticides attached to the sediment. Generally funded by the federal nonpoint source resources, initial efforts have begun in several tributaries but staff time is not available to work with local groups to promote and expand this effort.

Management Measure 1B: Confined Animal Facilities Wastewater and Runoff: There are 1702 dairies operating in the Central Valley: 202 dairies are in the Sacramento River watershed, more than 900 dairies are in the San Joaquin River watershed with over 600,000 milk cows, and more than 600 dairies are in the Tulare Lake watershed with around 500,000 milk cows. There are also 400 additional confined animal facilities for other large, non-dairy animals. The waste production at each dairy is equivalent to a small city. Dairy wastes contain ammonia, salts, and pathogens that threaten surface water quality in the event of a direct discharge to surface waters. Nitrates and salts also pose a serious groundwater threat. The majority of these facilities are not regulated by waste discharge requirements. Based on information obtained during compliance inspections, complaint investigations, and aerial surveillance flights, it is apparent that many of the facilities are following practices that may adversely impact both surface and ground water quality. Several drains and creeks on the eastside of the San Joaquin River have documented seasonal water quality degradation due to discharges from dairies. Lone Tree Creek and Temple Creek are both included on the 1998 Clean Water Act 303(d) list for low dissolved oxygen and elevated levels of ammonia. Leached wastes from corrals, retention ponds, manure storage, silage storage, and application on farmland threatens to degrade groundwater.

For almost 30 years the Regional Board has maintained a baseline program to address these problems. Although program elements include inspections, responding to complaints, adopting requirements and taking enforcement actions, resources were not available to adequately conduct these tasks. Because of the backlog of violations, most effort is devoted to documentation and enforcement of violations; therefore, little time is devoted to review and approval of new or expanded dairy facilities to assure

compliance with regulations and minimize the potential for additional surface water and ground water quality problems. There are large backlogs of reports of waste discharge and waste discharge requirement updates that are not being addressed. Recently, the regulation of runoff from dairies has been included in the general storm water permit program.

Formation of the Dairy Enforcement Task Force, composed of representatives from the attorney general's office, the US attorney's office and the county district attorney's office, has helped address regulation of noncompliant dairy operations. When all other efforts at controlling nonpoint source pollution from dairy wastes fail, the Regional Board will pursue legal prosecution of the responsible parties. Increased staffing in the Confined Animal Facility Unit (CAF Unit) has nearly doubled the number of cases being taken to the Dairy Enforcement Task Force.

Several counties in the Central Valley do not issue to dairies the types of permits that trigger the development of environmental assessments under the California Environmental Quality Act (CEQA). In these counties, the Regional Board becomes the CEQA lead agency if it is determined that waste discharge requirements (WDRs) are needed for a dairy. Increasing the difficulty of protecting the state's waters from these operations, recent CEQA documents, generated via litigation, have identified concerns that state standards for animal waste holding ponds may not adequately protect groundwater. Staff is working to complete a groundwater study at selected dairies to evaluate the effectiveness of current waste system design and operation to protect ground water quality. Following completion and public review of the report, staff will need to develop recommendations for improvements in dairy facility design and waste management. US EPA and Congress have a number of proposals that would change the federal regulations concerning animal confinement facilities. Some of the proposed changes could have a profound impact on regulation of confined animal facilities and could become a significant unfunded workload.

Confined animal operations have been identified as one of the most significant water quality problems in the State and the situation is getting worse as additional dairies are built and older dairies expanded. To add to the problem, the number of cows per dairy is increasing; some facilities operate with over 10,000 cows per facility. In addition to resource needs for addressing the surface water issues, resources are also needed to form a separate Confined Animal Facility Unit to address ground water issues.

Currently, there is about 10 PYs per year working with confined animal facilities. To conduct the necessary work, an additional 107 PYs per year are needed.

Management Measure 1C: Nutrient Management: The USGS has defined nitrate in groundwater as the most serious groundwater problem in the San Joaquin Valley. It is also a serious concern throughout the Central Valley. As all of these groundwater resources represent water supplies designated for domestic and municipal use, loss of them would be a serious impact on surface water supplies that will be needed to replace them. Land use activities and disposal activities under dairies, irrigated agriculture, commercial nurseries, nursery growing areas, and septic tank use areas are producing very high nitrate areas that are impacting domestic and municipal water supplies.

In addition to needing resources for developing a policy for controlling nitrate sources, resources are also needed to work with counties, agricultural organizations, California Fertilizer Association, dairy and other animal associations and others to reduce nitrate loading, develop best management practices and develop long term management plans to protect these water supplies. This work would require 1.0 PY, annually, for several years.

Management Measure 1D: Pesticide Management: In the Central Valley, the two largest pesticide issues has been the rice herbicide program and the organophosphate (OP) pesticide control efforts.

A multi-agency program on rice drainage to reduce off-site movement of pesticides has been effective in significantly reducing toxicity and the levels of rice pesticides reaching surface waters. Because of this successful program, the Sacramento River has been removed from the Clean Water Act Section 303(d) list for the rice pesticides. Current levels of monitoring, however, are not adequate to fully characterize the success of the program. In addition, some of the original rice pesticides have been replaced with other chemicals that have not been evaluated to determine their environmental effects. More monitoring is needed. Staff needs to continue to evaluate the program. Moreover, the Regional Board has committed to developing water quality objectives for five pesticides (carbofuran, malathion, methyl parathion, molinate, and thiobencarb) used on rice fields. However, the Board lacks the funds to conduct the necessary work and carry out a basin plan amendment. It is estimated that this work would require 0.5 PYs per year to evaluate existing information to develop appropriate water quality objectives. After that, 1.0 PYs will be needed to administer a basin plan amendment.

The OP pesticides diazinon and chlorpyrifos have been documented at toxic levels in the San Joaquin River, Sacramento River, Feather River, Delta, and other smaller water bodies. All of these water bodies have been included in the Clean Water Act Section 303(d) list of impaired water bodies. Regional Water Board staff is working with the Department of Pesticide Regulation, stakeholder groups, industry representatives, the various commodity Boards, the pesticide registrants and environmental groups to support efforts to develop management practices to reduce the levels of the pesticides reaching surface waters. CALFED has funded numerous projects directed toward development of these practices in agricultural and urban settings. Additional Calfed resources have been allocated to address questions about the ecological significance of observed levels of pesticides in and around the Delta. The Department of Fish and Game has completed their work on criteria for chlorpyrifos and diazinon. In the San Joaquin River, the loads and sources of pesticides have been well defined during drought periods. More information is still needed in the Delta and Sacramento River watershed.

Staff is currently compiling the information necessary to develop control programs for diazinon in the Sacramento and Feather Rivers and diazinon and chlorpyrifos in the San Joaquin River. Because this is a high priority activity, the resources allocated from the TMDL program (6 PYs to work on the Sacramento and San Joaquin Rivers and the urban streams in Sacramento and 1 PYs to work on the Delta) are sufficient to complete the development of these TMDLs.

A serious problem is presented with pesticides in ground water. In the Sacramento River Watershed, pesticides have impacted more than 30 square miles of ground water. Bentazon has been found in wells in Glenn, Colusa, Sutter, Yolo, and Yuba Counties, as have other pesticides, but to a lesser degree.

Elevated levels of pesticides, including Dibromochloropropane (DBCP) and Ethylene Dibromide (EDB) affect more than 1000 square miles of groundwater in the San Joaquin Valley. Most of the problem occurs in the Kings Basin (in the vicinity of Fresno). The source of DBCP is past applications. Pesticide contamination from past applications should be studied and management practices to reuse the residues and protect drinking water supplies should be developed. However, no staff resources are allocated to address this issue.

Management Measure 1E: Grazing: Cattle grazing in the upper basins of all three watersheds is impacting beneficial uses and riparian habitat by increasing sediment production, altering temperatures, and adding bacterial contamination. As many of these watersheds represent critical habitat for cold water species, it is essential to work with the cattle industry, University of California and others to increase the use of BMPs to protect these waters. Currently 1.0 PY is provided from federal nonpoint source program resources to work with the UC Cooperative Extension in their rangeland management program.

Management Measure 1F: Irrigation Water Management: The greatest threat to water quality in the Central Valley is the slow and gradual increase in salinity in the groundwater, especially in the Tulare Lake Basin and the San Joaquin River Basin. Previously, this was thought to be a problem associated with irrigated agriculture, especially drainage problem areas. Now the issue extends to all types of land uses, water uses and to point source dischargers. Long-term management options and loading alternatives need to be assessed. The nonpoint source program should be a catalyst to initiate such a program. Currently, there are no resources allocated for this task, 1.0 PYs are needed to assess this problem and develop a suitable scope of work.

Management Measure 2: Forestry: Forestry activities have the potential to cause water quality impairments due to temperature, sediment and siltation, and herbicides. Activities that cause problems include road construction, water crossings, harvesting, and application of herbicides. Staff works with the California Department of Forestry in the Timber Harvest Plan review process. This should include attending review team meetings, participating in pre-harvest inspections, and making recommendations to protect water quality. However, Region 5 is only allocated 2.2 PYs to address all forestry issues on Federal and private lands and this hardly allows Region 5 staff to review 10 percent of the timber harvest plans (THPs) submitted for private lands and leaves no resources for review of harvesting activities on USFS or BLM lands. Timber harvest plans often are prepared with questionable practices that are nevertheless approved to keep the plan "feasible", as defined by the Board of Forestry (BOF). Staff resource limitations do not allow "on-the-ground" review of most planned operations. Although buffer zones on anadramous streams have been increased, other streams (non-fish-bearing streams) are not included. On these streams, buffers remain too narrow to protect water quality. The Department of Fish and Game (DFG) has received staff increases for review of fishery streams. Although their review is limited to endangered species, it does provide some, though very limited, review of water quality issues. Road construction, maintenance and decommission continue to be major water quality problems. Small landowners have limited choices to locate roads due to property boundary constraints and there is confusion regarding acceptable methods to calculate 100-year floods, negating much of the benefit of recently adopted rules requiring 100-year design flow. In addition, the new requirements for crossings will require bridge installations that will be expensive for small landowners, potentially leading to

increased violations. Region 5 staff lack resources to review TPHs for implementation of this rule. Mechanical preparation of areas for forest rehabilitation continues to have significant water quality impacts. Tractors continue to be used on steep slopes, particularly in economically marginal situations. Increased field review would lead to fewer such situations. In addition, emergency operations following wildfires have significant impacts and there are no requirements for replanting or environmental review. Since THPs are not required to specify the type of vegetative controls used in connection with the harvest operation, the Regional Board has no way of knowing when water quality is threatened from herbicide sprays, particularly non-restricted herbicide sprays, unless the Department of Pesticide Regulation provides project review.

Cumulative impact analysis within watersheds should be coordinated by CDF. Resources should be used to develop databases of beneficial uses, projects and impacts within watersheds that could be accessed by foresters for preparing THPs. Training in acceptable methods for calculating 100-year flood flows and for acceptable crossing design also should be provided. A THP requirement to identify roads near Watercourse and Lake Protection Zones (WLPZs) and Equipment Limitation Zones (ELZs) would assist plan review. Provision of adequate staff to evaluate and document road maintenance successes and failures would result in the development of information and training for foresters, timber operators, landowners and agencies that could preclude future NPS problems.

To address our inability to review most THPs submitted to CDF for private lands, Regional Board staff now sends a letter to CDF to be placed in the THP file stating that we have not reviewed the THP in question. The letter further states that CDF approval of the THP without Regional Board review may constitute non-compliance with CEQA and the Forest Practices Act.

The Regional Board in January 2001 unanimously passed a resolution directing the Executive Officer "to investigate all possible means to obtain supplemental resources, including redirection…and to request resources from the State Water Resources Control Board if necessary". A BCP requesting additional resources as well as a PCP requesting a redirection of existing resources have been submitted to the State Board. Although the outcome of these requests is unknown, it is unlikely that this Region will receive significant new staff resources to address forestry issues. This program will continue to be severely under funded.

In order to adequately provide reviews for timber harvest plans including conducting pre-harvest and post-harvest inspections, the resources would need to be increased by an additional 20 PYs per year.

Management Measure 3.1, 3.2 and 3.3: Runoff from Developing Areas, Construction Sites and Existing Development: Runoff from municipalities with a population greater than 100,000, construction that disturbs 5 acres or more, and most industrial activities is addressed through Phase I of the Storm Water Regulatory Program. Phase II of the Storm Water Regulatory Program begins implementation in March 2003. In Phase II, municipalities with a population greater than 10,000 and construction that disturbs 1 acre or more will be regulated. Until Phase II is fully implemented, the separation between the regulatory program and the nonpoint source program is not fully understood.

Management Measure 3.4: On-site Disposal Systems: Improperly regulated on-site systems pose a significant threat to water quality and public health. The Regional Board has the legal responsibility to regulate individual wastewater treatment and disposal systems. The Board has delegated program implementation authority to each County that adopts an ordinance and develops a program consistent with the on-site disposal guidelines in the Basin Plans. Unfortunately, for approximately the last fifteen years there have not been adequate resources to review and approve the 38 County ordinances as directed by the Basin Plan. The Basin Plan guidelines are over 25 years old and are in need of review and update.

Recent legislation (Section 13291 of the California Water Code) requires the State Board to adopt regulations or standards for the permitting and operation of onsite sewage treatment systems by 1 January 2004. The State Board has formed advisory groups to help develop these regulations. Regional Board staff is participating in the advisory groups. 0.1 PYs of regulatory resources have been directed at this effort.

Management Measure 4.1G: Sewage Facility for Marinas and Recreational Boating: There are numerous boats in the Delta, rivers, and lakes in the Region. Many are used recreationally, but some are used as permanent living quarters. Large lakes such as Lake Shasta have prohibitions against sewage discharges from boats so sewage must be stored on board for later disposal at a pump-out facility. For other waters, discharges are supposed to be through an approved Marine Sanitation Device or also stored on board. From complaints and general experience, we are aware that sewage from some boats is discharged to open waters. There are numerous boats in the Delta used as permanent housing which are not hooked to sewers and are incapable of moving to a pumpout facility, so are likely discharging sewage to surface waters. Untreated sewage discharges are a health threat and cumulatively may be a significant BOD and nutrient load in some waters. Staff time is needed to evaluate the threat and work with other agencies (Coast Guard, health departments, and Department of Boating and Waterways) and marinas to assure adequate pumpout facilities are available and illegal discharges of sewage are stopped. Estimated staff time to develop a scope of work for this issue is 0.3 PYs.

Management Measure 5: Hydromodification: The State and Regional Boards regulate waste discharges from hydromodification activities through the Water Quality Certification program. This program has allocated funding and is described separately.

Habitat protection and improvement also fall under this management measure. Major efforts are being undertaken by CALFED, the Governor's Watershed Protection Council and others to restore cold water migration routes and habitat for endangered species. While many of these groups are working on habitat improvement, a major impact that is not addressed is warm water return flows from urban runoff, agriculture and other types of land use. An additional 2.0 PYs are needed to characterize and control these discharges.

Management Measure 6: Wetlands, Riparian Areas and Vegetated Treatment Systems: The Regional Board has the authority to regulate activities affecting wetlands under both State and federal law through the Water Quality Certification program. This program has allocated funding and is described separately.

Wetlands are unique systems that the Regional Board has not fully evaluated. The following are the long-term goals for protecting wetlands within Central Valley:

- Support projects that ensure no overall net loss and achieve a long-term net gain in the quantity and quality, and permanence of wetlands acreage and values in California in a manner that fosters creativity, stewardship and respect for private property (California Wetlands Conservation Policy, Executive Order W-59-93)

- Encourage partnerships to make landowner incentive programs and cooperative planning efforts the primary focus of wetland conservation and restoration

- Encourage the use of appropriate management measures and best management practices for wetlands protection, enhancement, restoration, or creation

- Promote improved public awareness and education

At present, the Regional Board does not have a wetlands policy; staff assists individuals with proposals for CWA wetlands grants. A wetlands program for the Central Valley needs to be developed and implemented. An additional 2.0 PYs will be needed to:

- Evaluate wetlands as a beneficial use to be used in the Basin Plan

- Perform wetlands inventory for the region

- Support stakeholder activities that work to preserve and enhance wetlands

Abandoned mines: Although not one of the NPS Management Categories, abandoned mines and resource extraction activities impact waters in the Region. There are more than 50 identified abandoned mines in the Region, many with adit flows or runoff through tailings or process wastes which result in discharges to surface waters. Mines with responsible parties are regulated under the NPDES Program. Other work on mines is conducted in conjunction with other programs such as TMDLs. An unfounded priority is to assess the relative impacts of the various discharges on surface waters to develop a priorities for staff work. Work is also needed to develop discharge standards and evaluate various treatment/remediation alternatives. Estimated staff time: 1.8 PYs.